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## SEASONAL PROBLEMS IN FINANCIAL ADMINISTRATION<sup>1</sup>

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Those phases of financial administration which have primarily to do with the plans for the business of a single season form a fairly distinct and separate portion of the general field of business finance. They center around the provision of cash for current needs and the disposal of surplus funds in the most advantageous manner. In general it may be said that in discussing the handling of seasonal problems in financial administration a firm must be viewed as a going concern rather than as a corporation in process of organization or reorganization, and that it must be considered in its relation to the commercial bank rather than to the investment banker.

The point of view from which it is proposed to attack these problems may properly be briefly indicated at the outset. As a business grows in size it becomes necessary for the higher officers to delegate more and more of their former functions to subordinates; and there is always danger in such a process that authority will be delegated, too, with a consequent loss of unity in the organization and all the evils that such a multiplicity of counsels entails. This

<sup>1</sup>The writer wishes to acknowledge his indebtedness to Professor James O. McKinsey for criticism and encouragement. It was at his suggestion that this paper was undertaken.

contingency can be largely avoided by the reduction of the delegated function to a standardized routine. All this scarcely needs saying; the question is, How is administrative activity to be reduced to routine? The point of view here spoken for is that this can be accomplished in part by establishing, in connection with a company's information service, its accounting and business-statistics organization, a system of formal business plans in the shape of estimates for the coming season. The formulation of these plans gives the appropriate officers opportunity to exercise control, while the execution of the plans becomes a matter of administrative detail. In the larger businesses some such method or organization as this is not merely an advantage; it is a practical necessity.

Before proceeding to follow out this viewpoint in its application to seasonal problems of financial administration, it may be desirable to take account of some of the advantages that may be expected to accrue from such a policy. The more important of these may be classified under three main heads. The first type of advantage is by no means peculiar to financial administration. It may be described by saying that a standardized system of formulating business plans on the basis of information gathered for the purpose, and of comparing these plans with the results, transfers business experience from the individual to the organization. Business has always been run on the basis of plans, but these plans have too often been carried around in one man's head. Under such an arrangement important decisions are made by the intuitive faculties of a single individual, faculties which have taken years of experience to develop but which perish with the individual. But it has come to be generally recognized as a principle of sound business management that an organization should be independent of any particular person in it. The present proposal involves a long step in this direction.

Perhaps the most obvious and most important gain that may be expected from such a system of plans and estimates, however, is the one already suggested: it co-ordinates the activities of the several parts of an organization into a single, unified, and consistent policy.<sup>1</sup> The larger the concern, the greater the chance that

<sup>1</sup> Cf. Park Mathewson, "Budgets and the Banker," *Successful Banking*, IV, No. 10, p. 11.

departments will work at cross-purposes. There must be a pretty close co-operation between purchases and sales, or a business will purchase more than it can sell or sell more than it can deliver; but at least there is some slack. That is what the inventory is for. But the cash balance is intended just for the purpose of taking up or allowing slack, as the needs of the moment require. It is the business of the cashier or some other officer to furnish cash as it is needed and care for it as it comes in. If business conditions are fairly stable and the firm is not growing too rapidly, he can guess that the cash requirements will be about the same as last year. More than this, he can hardly do without an intimate knowledge of the plans of all the other departments.

Moreover, if the plans of each department manager are formulated into a definite departmental estimate or budget in consultation with other department heads, they will be harmonized into a single plan for the whole establishment. The understanding of the other man's problems that a manager gains through such consultations is worth a great deal. This is peculiarly true in the case of financial administration. Upon the conformity of this phase of policy to the other activities of the business depends the ability of its treasury to meet current obligations. In the one extreme, lack of co-ordination spells insolvency. The other extreme is not so serious—a mere excess of employable funds.

It is sometimes urged that a system of estimates might do very well during stable business conditions, but would be impossible in times of disturbance. To this it must be replied that in stable times the several departments get along very well together, each doing about as was done in the previous season. It is in times of rapid market changes that a budget system is of the greatest importance in co-ordinating the activities of the different departments so as to meet the changed conditions with a solid front.

But not only does the closer co-ordination between the financial and the other phases of business administration under a more systematic method of planning bank credit put the business on a firmer financial foundation on the one hand and effect a more accurate adjustment of borrowing to requirements on the other, but as a result of this the business should also be in a better position

to secure concessions from its banks in the way of terms and amounts of loans. The commercial bank is coming to require more and more information in its credit analysis about its customer and what he intends to do with the money he wants to borrow. The customer who is prepared to answer these questions with the precision of a formal estimate of cash requirements for the conduct of business plans may very well look for a more favorable rate, a more lenient deposit requirement, or in one way or another more satisfactory accommodations.

Needless to say, the specific character of seasonal problems of financial administration varies considerably from one line of business to another. Nevertheless the larger firms in different fields have a good deal in common, and it is toward this common ground that the present discussion is primarily directed, although the illustrations necessarily involve certain limiting peculiarities.

It is quite common to set these seasonal questions off from the longer-time financial considerations by saying that they are concerned with the handling of current assets and liabilities or with working capital, the longer time policies having to do with permanent assets and liabilities. This classification of assets and liabilities is undoubtedly a useful one, but it is also one that has led to some confusion of thought. It may be well to examine it more closely. If we consider that for each type of asset, or group of similar properties there is a constant inflow and outflow of the individual items—a turnover—we may define a current asset as one which will turn over more rapidly than once a year. Merchandise, for example, is a current asset, because on the average a particular piece of goods remains in stock for less than one year. This turnover period is equal to the average inventory divided by the total sales or purchases for the year, whichever is less.<sup>1</sup> If the

<sup>1</sup> There are several ways of calculating turnover. The advantage in taking the smaller item (sales or purchases) is that it eliminates the apparent turnover due solely to the growth or contraction of the business. The application of this principle to labor turnover has been discussed at some length by Frederick S. Crum, "How to Figure Labor Turnover," *Publications of the American Statistical Association*, XVI, 361-73. In any case it is well to remember that the average inventory and the sales or purchases, as the case may be, should both be reckoned at the same price, either cost or selling price, a rule which is often violated in practice.

turnover period or life of an asset is greater than a year, it is a permanent asset. In general, the more quickly an asset passes through a business—the more rapid its turnover—the more profitable is the investment in that form of property. Merchandise should not be allowed to stand on the shelves any longer than necessary, and the service rendered by a machine becomes more economical as the period during which the service is rendered is shortened. The rapidity of turnover (most useful in the case of current assets) is an indication of the efficiency of investment. Very much the same considerations apply to liabilities, except that in this case a slower turnover may point to a lower rate of interest. It pays not to take a trade discount until the last day of the discount period.

It is often felt, however, that because a particular piece of merchandise will shortly be converted into cash again, it is somehow a less permanent form of investment than a building. Thus bankers frequently maintain that if they loan money for the purchase of goods that are to be sold again, "they can see their money coming back." But an inventory that never falls below a certain amount, such as \$5,000, represents just as truly a permanent investment of \$5,000 as the longest lived of permanent assets. Similarly with current liabilities: Very few concerns pay off all their short-time obligations at once, though they may clean up their accounts entirely first with one bank and then with another during the off-season. A firm that perpetually has at least \$10,000 of commercial loans outstanding is to all intents and purposes obtaining \$10,000 of permanent capital from commercial banks.<sup>1</sup> It is well known that the large Chicago packing houses are extensively financed on this basis.

It seems desirable, therefore, to formulate the problems of seasonal finance in some other terms than those of current assets and liabilities. For present purposes it makes very little difference how rapidly an asset turns over, provided it does not fluctuate in amount. Nor does the mere fluctuation of any single item on the balance sheet (with one or two exceptions, to be discussed

<sup>1</sup> This is discussed from the banker's viewpoint in H. G. Moulton's "Commercial Banking and Capital Formation," *Journal of Political Economy*, XXVI, 713 ff.

shortly) enter into the consideration. The increase in one asset may be offset by a decrease in another or by an increase in some liability. It is only the net variations in the totals that affect the season's cash requirements. It is convenient to express this fact by setting up a special classification of assets and liabilities. We will define the smallest total of assets of a firm for any date in a given year as the constant assets for that year. This amount will, of course, be the same as the minimum total for liabilities plus proprietorship, and so may also be referred to as the constant capital. For any date during the year, then, the excess of the assets or the capital over this constant sum may be called the variable assets or variable capital for that date. The variations in the total proprietorship, considered separately, will not normally be large within the year. The profits item will increase gradually, only to be largely wiped out at the end of each quarter by the payment of dividends. From the point of view of seasonal finance, moreover, it is a given quantity largely beyond control, even if it is due for a considerable change by a new issue of securities. This forms an interesting contrast to the position that proprietorship occupies in the longer-time financial policies of a corporation. Much the same is true of the capital raised by bonds. In fact, as far as control is concerned most of the balance-sheet items are given quantities. We may think of the problems of seasonal finance as centering around the preservation of the equality of variable assets and variable liabilities, or keeping the balance in the balance sheet. The principal items which serve to preserve this balance are cash and commercial loans. The cash on hand absorbs the day-to-day and hour-to-hour fluctuations; while the seasonal fluctuations proper are met primarily out of short-time bank loans. When the variable capital is zero, which must occur at least once a year, these loans will be at a minimum. But during the busy season the amount of variable capital to be provided by loans may become a considerable part of the whole capital, and either during or just after the busiest part of the year it will probably reach its maximum in most lines of business. For present purposes this time is very significant and we may designate it as the financial peak load of the season.

The resort to commercial loans by establishing a line of credit at some bank is only one of a number of methods of meeting or partially avoiding the financial peak. Where a concern maintains a sinking fund for any purpose, it can usually arrange to make its investments at off-peak periods. In some cases where the peak load comes regularly at or near a known date it may be possible to see that dividends are paid at a more convenient time. A large concern with a fairly diversified business and territory is likely by comparison to have a small peak load, because it is made up of little peaks that come at different times. Hence its credit requirements are small, relative to its credit standing, and it is in a strong position in times of financial stress. Instead of borrowing directly from banks, many concerns discount their own notes through brokers. Again customers' paper is often discounted at banks. The assignment of accounts, which is in some ways an analogous procedure, may perhaps be reckoned among the methods of meeting a peak load.<sup>1</sup> The failure to take trade discounts is another possibility that has been widely talked against of late. Two or more of these methods may often be combined to advantage, a common plan being to make use of the commercial paper broker first and retain the line of credit at some bank as an emergency reserve.

Besides these alternatives to bank loans, there is the possibility of having enough permanent capital to cover the peak load. This need not mean that the surplus capital will lie idle when it is not needed in the conduct of the business; it may be invested in reliable securities. A reserve of this sort is often advocated, but unfortunately it is likely to be least liquid when it is most needed. Moreover, this method can seldom be used alone, as most concerns are not so situated as to be able to place their idle capital as favorably as a bank could, especially in view of the smaller amounts that it would be necessary to dispose of at any one time. Whichever of the other methods of meeting the seasonal fluctuations in financial requirements may be made use of, practically every business must make use of commercial bank loans.

<sup>1</sup> Cf. H. G. Moulton, "Commercial Credit or Discount Companies," *Journal of Political Economy*, December, 1920, p. 828.



In any case, if the financial administration is to be properly co-ordinated with the activities of the other departments, in any business of considerable size there should be some permanent organization for gathering and classifying appropriate information, formulating on this basis plans for the future in black and white, and subsequent reporting to show how these plans have been carried out. We will refer to such a system of accounting and statistics as a departmental budget system. In discussing the application of such a system to the seasonal administration of finance it will be simpler to take account of only one method of meeting the short-time fluctuations in cash requirements; hence commercial loans will be used by way of illustration.

It is clear that if the business is to be reasonably sure of getting funds when they are needed, the safest plan is to arrange for them in advance. And in order to decide how large a line of credit is needed from the bank, some kind of an estimate or budget of the financial requirements of the period, formal or otherwise, is absolutely essential to any well-run business. The estimate need not be perfectly accurate, for the business may not draw upon the full line of credit that its bank extends; but it would not be desirable to fall short too far or too often. It may turn out, of course, that it will be impossible to obtain the funds necessary to carry out the program of the other departments of the business. This brings out another phase of the importance of having well-formulated plans for the whole business. The financial estimate is made after the others on the basis of what they will require. But a firm must not undertake so much business that its financial requirements will be greater than its credit resources. The financial budget exercises a censorship over the others. It does not guarantee that the needed funds will be forthcoming; but if they should not be, the sooner a business finds it out the better. Ordinarily this censorship may be of no great consequence, but in bad times it may be vital to the solvency of the business itself.

When the financial administration is standardized into a routine such as that outlined below, the estimate of cash requirements has a further function—the determination of certain safety-points by the comptroller or other responsible officer. These

points will be called the peak load credit reserve, and the seasonal cash maxima and minima. They serve for the guidance of the person to whom the routine of financial administration is delegated, and to whom for convenience we will refer as the cashier. They also make it possible for the comptroller to put in his hand at critical points. Just what they are will appear presently.

There are a number of difficulties in the way of developing a financial budget. It is not departmental in the same sense that the purchases or sales budget is. In a much greater degree it involves the whole of the business. Not that there is any department in any line of business the plans of which for the coming season do not require the hearty co-operation of all the other departments; it is of the very essence of a budget-system to co-ordinate the activities of the various departmental managers and prevent their working at cross-purposes. But in a peculiar degree the financial budget involves the affairs of the business as a whole. It is one of the two general budgets.<sup>1</sup> The transactions of each day's business must be planned with a view to their effect on: (a) the profits, and (b) the cash balance. Neither of these effects can be completely determined from the activities of one department alone. Every department has something to do with making profits, or it would not be in the business. And nearly every department, if not taking in cash, is at least continually requiring the expenditure of cash in its operations. Thus both sets of plans can only be made up as summaries of the detailed departmental estimates. If the financial or cash budget is to be called a departmental budget, it is clearly the last of the departmental budgets to be made up. For this reason, in the evolution of business practice it is likely to be the last to crystallize into a formal, standardized report. The development of the financial budget must wait upon the development of all the other departmental budgets.

But the development of a standardized system of business plans encounters other difficulties. Partly because and partly in

<sup>1</sup> There may be some question as to the prior right of the estimate of cash requirements to the name "financial budget"; this term might equally well be applied to the plans in regard to profits. Cf. W. H. Lough, *Business Finance*, p. 486.

spite of the fact that every business, no matter what it may be, must face the problems of financial administration, the methods of meeting these problems are very unstandardized. The great range of sizes of businesses, the sensitivity of cash requirements to changes both within any department of the individual business and in the conditions of the business world without, give these problems a variety which very nearly baffles standardization. Without some standardization there can be little delegation of this important function of all business, and without delegation financial budgeting is almost inevitably a species of mental arithmetic. So long as an able and experienced business man keeps watch over a firm's bank account, the question of how to make plans in a systematic manner that will preserve the past financial experience of the firm for future use does not arise. It is the necessity of presenting plans in writing to a superior for his approval that leads to a standardized routine of organizing information and formulating plans, independent of the life of any particular individual.

But the necessity of delegation causes difficulties too. Even where standardization would otherwise be possible, a business man may well be loath to let any part of the financial administration pass out of his own hands. To give up this vital function may be to yield his claim to authority. Besides, the old way has always been good enough, and there does not appear to him to be any need for a change so urgent as to offset the chances involved in letting it out to someone else. Lack of standardization makes delegation impossible; unwillingness to delegate interferes with standardization. But the business executive is often not so much knowingly unwilling as unable to let part of the financial administration pass out of his own immediate supervision. He may be able to grasp a situation very quickly and precisely, and yet not be able to give you the slightest clue as to how he did it. His decisions and judgments are habits of long standing and he is frequently quite incapable of explaining the basis on which he makes them. Then from the point of view of getting information another difficulty arises. Competition still shrouds this field of business

in some privacy, and what an executive is able to tell you he may not want his competitors to know. Both the inability and the reticence of those in charge of the financial administration of different businesses to meet and share experiences tend to retard the development of standardization. Unfortunately, too, this reticence extends even to those lines of business in which business budgets have made greatest progress—the public utilities. Many of them are slow to give out information because they fear it may be abused for political purposes. But in general it may be said that business success is coming less and less to depend on business secrecy and more and more on traditions and morale that require years to develop.

Although it is difficult to get statistics on this phase of business practice, the generalization may be hazarded that the successful business man normally makes up his estimate of the season's financial requirements by modifying the results of the preceding year to suit the amount of business expected, the general business conditions, and the plans for extension of plant, if any, that are under way. Just how these modifications are made it would be difficult to say, though the method may perhaps be not inaptly described as "expert guesswork." Indeed, this is about all that is possible in the absence of a complete departmental budget system. But where each department makes a formal estimate of requirements and possible achievements, its budget can be made to show, along with the other figures, the expected cash requirements and cash receipts. The financial budget then becomes a summary of these items from the various departmental budgets.

Before the budget of any one department can be definitely approved, it must be combined with all the others and organized into a single consistent policy for the whole firm. This must be done by the general manager in consultation with the various department heads. For purposes of executive control all budgets are made up of two opposing classes of estimates: allotments or appropriations, and quotas. The quota is a statement of what a department plans to accomplish, of goods, services, etc., that it offers to deliver. When it has been accepted and incorporated

into the general program, it is a schedule to be followed, a quota to be attained. The allotment, on the other hand, is an estimate of the materials, services, etc., that will be needed in following out this program—is, in fact, a requisition for these materials and services. After it has been approved, it becomes an appropriation not to be exceeded without permission. What to one department appears as an allotment may be a quota for another; and it is through this dovetailing of quota and allotment that a budget system seeks to co-ordinate the activities of all the departments of a vast organization into a single unified policy.

Applied to the financial budget, this distinction means that the estimate of cash requirements for any department, once it has been approved, becomes an allotment of cash to that department. After the allotment has been settled upon, the mere paying out of cash to that department is a matter of routine, and can be delegated by the executive in charge of finance without serious loss of control. The cashier has no need of referring the matter higher up for authority to pay, unless the requirements turn out to be greater than was expected and the routine is broken into. Similarly the cash quota is a statement of anticipated cash receipts. So long as the quota is at least equaled, the mere receiving of or failure to receive cash requires no great discretion. There is no reason why the comptroller should worry himself over it. But if receipts should fail to come up to expectations, then the cashier should notify him immediately. These considerations make it clear that a budget system includes something more than a method of collecting information and making plans; there must also be some way of finding out how closely these plans are lived up to after they have been made—a system of reports for the use of the executive that will compare plans with results.

In the case of a good many kinds of items there should be no great difficulty in determining how much cash will be required, and when it will be required. This is true for the estimates of pay-rolls, taxes, insurance, interest, dividends, sinking fund charges, rent, water, electricity, etc., and of repairs and maintenance of plant. These items will appear on the several departmental

budgets ready to be incorporated in the receipts and disbursements totals for the department. But there are two important types of items of which this probably will not be true. Where goods (or services) are purchased or sold on account, there is the necessity for determining the time of payment or collection, a problem which involves a considerable number of complicating factors.

The first step in solving this problem is obviously to separate cash sales and purchases from sales and purchases on account. This means that the records of previous years must also separate these items. Again, if there are radical differences in terms, business conditions, etc., it may be desirable to classify sales and purchases by departments, territories, or lines of goods, so as to be able to treat these items separately. But this is only the beginning. Let us confine our attention to sales. Obviously for this purpose the estimate must be reduced by whatever percentage past experience has shown should be set aside as an allowance for bad debts. Besides these estimates of sales on account for each month, we need to know something about the collection period. This is the same as the turnover period for accounts receivable, and is equal to the average of accounts receivable at the end of each month divided by the total collections for the year.<sup>1</sup> If the collection period were constant and equal to one-twelfth, it is clear that the sales estimate for January would be the collections estimate for February, too. But if it were twenty days, the collections for January would equal the sales from December 12 to January 12, a figure which it is not convenient to get if the estimates are made by months. Moreover, the collection period may vary from season to season, and will certainly change with business conditions. And if the length of the period varies, the collections for a month will not be the same as the sales during a preceding interval of equal length. It is possible to get pretty accurate results by handling the material graphically in what is called the cumulative form; this means that the total sales or collections are shown from the beginning of the period to each succeeding date. In order to illustrate the

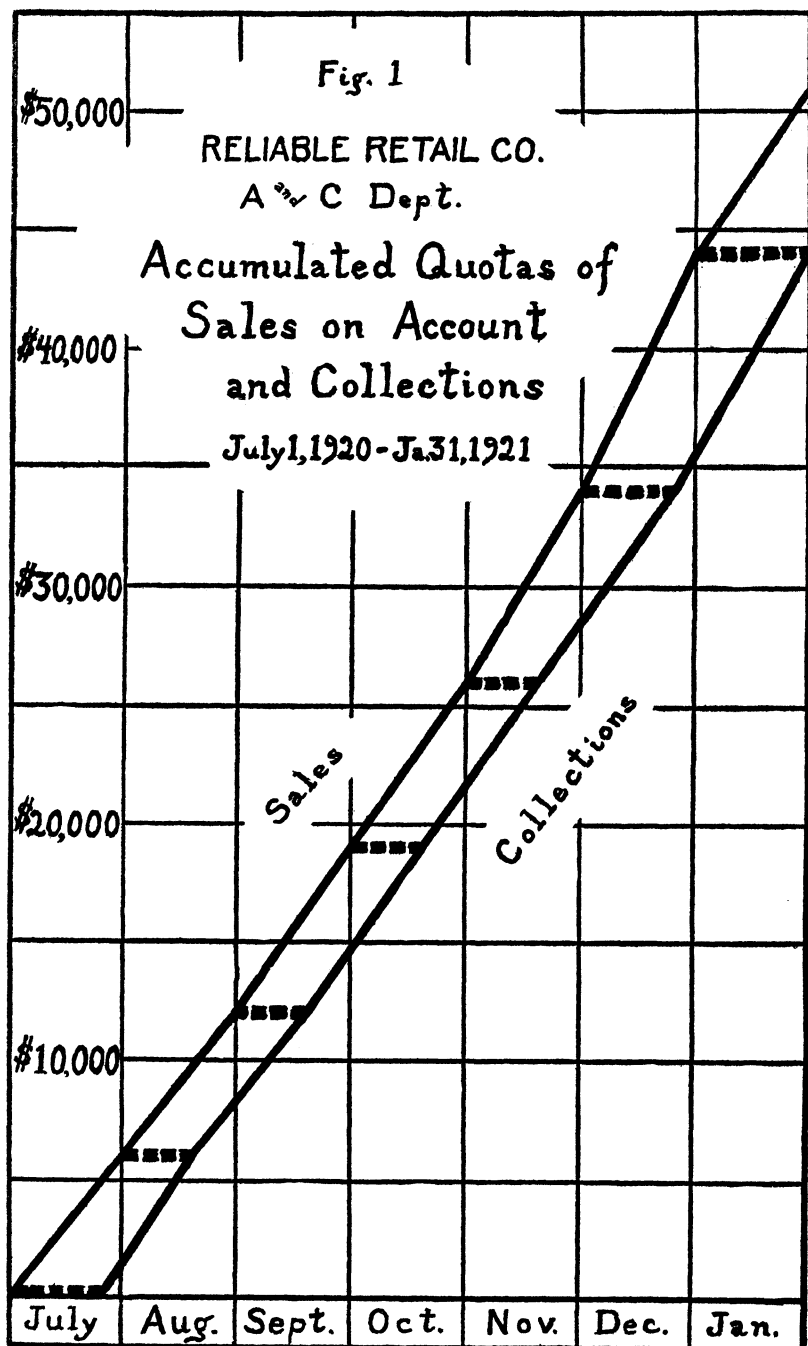
<sup>1</sup> Strictly speaking, the divisor is sales or collections, whichever is less; cf. above, p. 176, note.

method, the following data may be assumed as shown on the sales estimate of the Reliable Retail Company for the first six months of 1920:

Month	Sales Estimate	Date	Estimated Collections Period by Days
July .....	\$ 6,000	July 1	24
August .....	6,000	August 1	18
September .....	7,000	September 1	18
October .....	7,000	October 1	18
November .....	8,000	November 1	18
December .....	10,000	December 1	24
January .....	7,000	January 1	30
Total .....	\$51,000		

These data are plotted in Figure 1, the horizontal scale indicating the dates (for accurate results Sundays and holidays should be omitted), and the vertical scale showing the amounts. The estimated collections periods are for the first of the month in each case. They are represented graphically by the dotted horizontal lines extending to the right of the sales curve at each point where it begins a new month. An amount equal to the accounts receivable on the books on December 1 will be collected during the first twenty-four days of the month so that the receipts corresponding to December sales will begin coming in during the last six days of December, and continue until January 18. The line connecting the right-hand ends of these horizontals indicates the accumulated collections. Thus we can read off the collections estimate for January as \$10,000. It is clear that if we knew the sales and collections we could construct a graph like this and so determine the collections period. In this way records of the collections periods for previous years could be kept as a basis for estimating future collections periods. In making such an estimate it is always essential to take into consideration the effect of business conditions on collections. The index number of collections which the government is hoping to establish should be useful in estimating the effect of business conditions on the collection period.<sup>1</sup>

<sup>1</sup> The project has encountered difficulties due to wide variations in credit practice. See W. H. Steiner's article on "Methods of Developing an Index of Collection Conditions" in the current issue of the *Quarterly Publications of the American Statistical Association*.





The method of handling estimates of purchases on account is so much like that of sales that it need not receive special consideration. It is somewhat simpler, because the payment period is more completely subject to control. There is, however, another group of items that deserves individual mention. When a firm is planning a considerable extension of plant and equipment such as to require a large capital outlay, these plans will necessarily be included in the cash budget. It is unlikely that the capital will be raised at just the time and in just the amounts that will be required by the building operations, so that these results must be taken into account in any system of financial budgetary control. There will be estimates of the funds required during each period for the construction work. These may be made by company engineers, architects, contractors, etc. There will also be estimates of the amounts of capital to be raised by the issue of securities. The former become cash allotments, the latter a cash quota. They enter into the financial budget for the season precisely as do the receipts and disbursements for current business.

There is one type of transactions with cash that is not to be included in the cash budget, however—transactions with the commercial bank. These constitute the elastic and controllable factor which maintains the equality between variable assets and variable capital. It is the amount of receipts and disbursements from commercial loans that the budget is designed to ascertain; hence it must be excluded from the calculations.

The financial budget, then, if it is to be more than a very rough estimate, must be a summary of all the departmental budgets. It must show the total estimated cash receipts from each cash-receiving department, and the total estimated cash disbursements for each cash-disbursing department. These may be summarized on a form such as that shown in Form I. In this case the budget is made by months for a six-month period, but these figures are of course arbitrary. The upper part of the form is for receipts, and the lower for disbursements. The monthly quotas for each department will be entered in the line bearing its name and the column of the appropriate month. The monthly totals for the whole firm will appear in the last line of the receipts section, and the total

quota for each department for the whole period in the appropriate line in the last column. In a similar manner the departmental cash allotments will be transferred from the departmental budgets to the disbursements section of the cash budget, where they will be entered in the appropriate line and column.

## Form I

## RELIABLE RETAIL COMPANY\*

## CASH BUDGET

August 1, 1920, to January 31, 1921

Receipts	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Total
A&C Department.....	\$ 4,000	3,500	3,000	2,500	3,500	3,000	19,500
L&N Department.....	3,000	3,000	2,500	2,500	2,250	2,000	15,250
B&E Department.....	3,000	3,000	2,000	2,000	2,000	1,250	13,250
A&C Collections.....	7,000	6,500	7,000	7,000	6,500	9,000	43,000
†							
Total.....	\$17,000	16,000	14,500	14,000	14,250	15,250	91,000
Disbursements	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Total
A&C Department.....	7,000	6,000	10,000	16,000	12,000	8,000	59,000
L&N Department.....	1,500	2,000	1,500	1,500	2,000	1,500	10,000
B&E Department.....	1,500	2,000	2,000	2,000	2,000	1,500	11,000
Administration.....	3,000	6,000	3,000	3,000	6,000	3,000	24,000
‡							
Total.....	\$13,000	16,000	16,500	22,500	22,000	14,000	104,000

\*Roman type indicates original form; items in italics have been supplied by the user of the form.

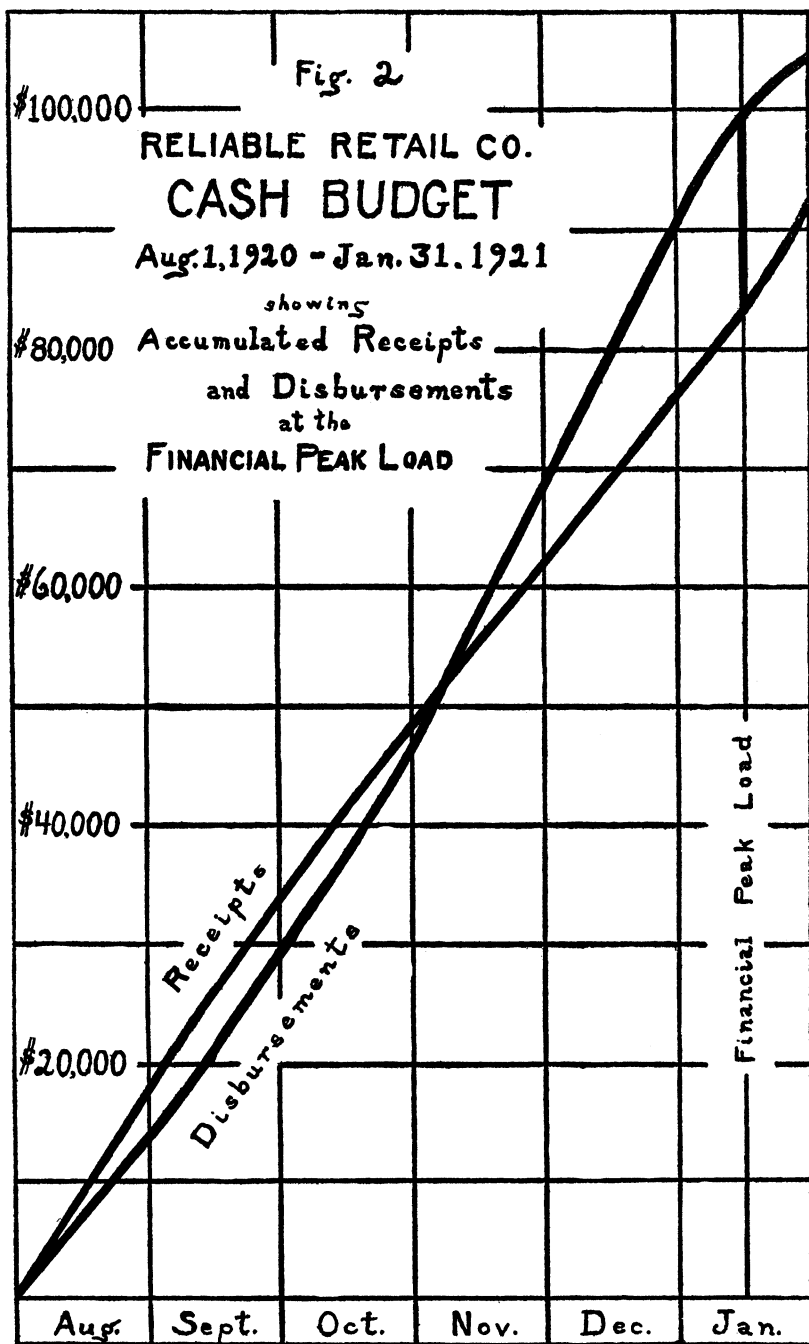
† Sale of securities might appear here.

‡ Cost of new building or equipment might be shown in this line.

In this form the budget is obviously not ready for its most important use—to determine how large a line of credit will be required by a business at its bank in order to carry out its plans for the season. Nor is the budget in condition to be finally approved until such a line of credit has been actually established.

But before this amount can be determined there are several further factors to be taken into consideration. The amount of cash on hand at the beginning of the period must be compared with the balance which it is planned to maintain at the time of the peak load. To the loans outstanding at the beginning of the period must be added a sum which will cover the net excess of disbursements up to the time of the peak. It is desirable too that there should be some slight allowance made for a margin of error.

The most significant factor in the situation is that of the excess of disbursements over receipts from the first of the budget period to the time of the financial peak. It is just this excess that makes it necessary to increase the variable capital to a maximum, and so brings about the financial peak. The bank loans required to carry on the business will be at a maximum at this time. It is this amount of net disbursements that the cash budget is primarily designed to ascertain. It would not do, therefore, to have the budget show merely the total disbursements and the total receipts for the whole budget period. If the peak came at the middle of the period, the excess of disbursements during the first half might be about equaled by the excess of receipts during the second half of the period, so that the peak would practically disappear. Hence it is necessary to break the estimates of receipts and disbursements up into sub-periods. In the illustration sub-periods of a month were used. But even with sub-periods of this length the peak might be subject to considerable flattening, if it were to fall near the middle of a month—and there is no way of telling from the material in such a form as that suggested in Form I whether the peak comes at the middle of a month or the end. In order to get around this difficulty we may resort to a further use of the principles of the cumulative graph. Assuming a fairly even variation in the receipts and disbursements from week to week, this method gives a good approximation. It is illustrated in Figure 2, the dates being shown on the horizontal axis and the amounts on the vertical, as before. The points are plotted to indicate the total accumulated gross receipts and gross disbursements up to the end of each month, and these points are then connected by two “smoothed curves.” The vertical distance between the two curves for any



date indicates the net excess of receipts or disbursements—according as the one curve or the other is higher—since the beginning of the period. The date on which this vertical spread is a maximum for disbursements will be that of the financial peak load of the season. On this basis the amount of the excess of disbursements would be estimated at \$16,000, and the approximate date of the peak load would be January 15. Had we taken the data directly from the budget form, we should have had \$14,000 on January 1.

In order to determine the maximum amount of bank loans that will be required during the season it is only necessary to add the four following quantities: (1) the total loans outstanding on the first day of the budget period; (2) the net disbursements from the beginning of the period to the time of the peak load, as indicated graphically; (3) what will be called the “peak load credit reserve,” or amount of bank credit to be kept in reserve in case of emergency; and (4) the difference between the “outgoing cash maximum” and the balance of cash on hand at the first of the period. The general nature of the “peak load credit reserve” and of the “outgoing cash maximum” is sufficiently evident for the present; they are considered in more detail below.

In establishing a budget system the question of the proper budget period is an important one. The necessity that it should fit into the fiscal or calendar year makes it desirable that the period should be either six or twelve months in length. But it is essential, too, that both in length and in the time of beginning and ending it should be adapted to the peculiarities of business practice in the trade in question. The amount of loans outstanding at the beginning of the period is of comparatively little importance; the significant point in this connection is that the peak load should be far enough away to insure ample time to determine whether the season's plans can be financed, and, if this proves impossible, to inaugurate a balanced retrenchment policy. Roughly, the time required to execute such a policy coincides with the output period, i.e., the length of time from the date of ordering merchandise or materials to the date of collecting on sales. The budget period, if anything, should be longer than the output period. The necessity for this is the need of a budget system itself. A change of

policy involves the participation of all the departments, but ordinarily they will not all enter upon a retrenchment policy at one time. This is most obvious in the case of a manufacturing concern. The purchase of raw materials may well fall off before the finishing room slows down (though sales and collections departments might not be so immediately involved in a curtailment). But the length of the period is likely to be determined in calendar units; the more significant aspect is the time of year. The peak load should come toward the end of the period, unless that is considerably longer than the output interval.

As soon as the amount of loans required to transact the estimated season's business is determined, the comptroller or other responsible officer will arrange lines of credit at the banks with which the concern does business. In case he should find it impossible to obtain the requisite amount, the entire budget of the business is in for a thoroughgoing revision downward. A program of retrenchment must be immediately inaugurated. Thus the cash budget exercises a censorship over business plans. But besides extraordinary budget revisions of this character in most manufacturing and commercial businesses where budget systems are employed, it is necessary to revise the departmental budgets from time to time, perhaps every month. In the case of public utilities the overhead charges are larger and this is probably not so essential. Where this is the case allotments and quotas would stand at the original figure, though if need be any department might apply for a change. But in the case of a periodic revision—and the cash budget will necessarily have to be revised when the departmental budgets are—the departmental allotments and quotas will be the figures fixed at the beginning of each month (or other period). Such a periodic revision offers a chance to compare plans with results. There should be formal departmental reports, comparing actual results with estimate, both as a means of seeing where things stand and as a basis for revision of the estimate for the next month. Indeed, if such a revision indicates a radical increase in the cash requirements of the business as a whole over the original plans, it may be necessary to require a revision of plans for the entire balance of the budget period, instead

of for a single month only. Ordinarily, however, a revision for single month should suffice.

But if the comptroller is not to let too much authority out of his hands, he must have other contacts than a monthly report. One of these is through the fixing of the peak load credit reserve, or amount of bank credit to be held in reserve for contingencies not foreseen in the budget proper. Obviously, no matter how carefully the original estimates of cash requirements for the season may have been made, there is sure to be some discrepancy between them and the amount of cash that subsequently is actually required in the conduct of the business. Hence it seems desirable that there should be some leeway in the credit established at the banks over and above the cash appropriated to specific purposes. The amount of this credit reserve will, of course, vary from one season to another. The comptroller must fix it on the basis of the budget. Once it has been established, it is a matter of routine to determine whether the reserve is being encroached upon by the actual transaction of business. This task can be properly delegated to the cashier or other subordinate, who compares the daily financial condition of the business with the estimate. Thus the comptroller only concerns himself with the matter at the time of the monthly or other revision of the budget, unless the line marked by the credit reserve is passed. This part of the financial administration only comes to the attention of the comptroller at those critical times which require his superior powers of discretion; and he himself determines how critical these times must be.

While this sort of leeway or reserve does not receive clear recognition in business practice, it is probable that most careful business men have some such notion as this in their heads, even when they formulate their financial plans entirely without any formal budget. But unless there is some record of the amount of margin allowed from year to year, compared to the discrepancy between actual and estimate, the experience gained each year is gained by the executive and not by the firm. In the case of an established budget system, a comparison of the previous margins allowed to the corresponding discrepancy between the actual and estimated cash requirements, perhaps in the form of their ratios

to the gross estimated disbursements, should be very useful as a basis for establishing a new peak load credit reserve. It will be seen that the credit reserve is closely related to the statistical concept of the probable error of the estimated net cash disbursements. One or two other factors which would enter into the determination of this safety factor may be mentioned. The general business situation would be important, as in times of crisis or stringency it is especially important not to have sailed too close. The willingness of the comptroller to delegate authority is likely to be of some moment, on the one hand, as are the ability and integrity of the cashier, on the other, though these two factors are difficult to separate clearly. Finally, the peak load credit reserve must be fixed in view of the particular method by which the cashier determines whether it has been encroached upon by the actual results of the business. Before we can discuss this we must consider the nature of the cash maxima and minima.

The functions of the cashier are in some respects very much like those of a store-keeper. He keeps the records of an inventory and handles the routine of the issuing and replenishment of stock. The use of maxima and minima as a means of standardizing store-keeping so as to make possible a delegation of routine combined with a retention of executive control over inventory is a familiar device—the balance of stores system. The store-keeper compares the amount of stock on hand with a prescribed minimum. He issues goods on proper requisition, and when the stock has fallen below the minimum he requisitions a quantity sufficient to bring it up to the specified maximum. The official who establishes the maximum and minimum thus determines what quantity of goods shall be ordered and when they shall be ordered. Branch cash accounts are sometimes managed on a similar plan. The central office fixes the upper and lower limits for the cash balance at each branch, and the branch must then keep the balance between these limits. But the amount of cash on hand differs from most inventories. The store-keeper has only to order more stock when the inventory gets too low; the cashier has to see that more cash is obtained when it reaches a certain minimum, and he has also to dispose properly of the unnecessary surplus when the cash balance



gets too high. Consequently the comptroller may find it desirable to have two sets of limits, one for a cash-receiving period and one for a cash-disbursing period. Again it may be that a single pair of limits will be perfectly satisfactory. Whether two sets of limits will be needed is a matter of policy for each individual firm, to be decided by the executive in discretion on the basis of the peculiar conditions in his particular business.

The cash minimum for either a receiving or a disbursing period will have to include: (1) funds used for making change, petty cash, etc.; and (2) currency received, but not deposited, and the bank balance. The problem of determining how much will be required for the first two purposes is very much like that for inventory. Other things being equal, it is desirable that the turnovers should be as rapid as possible, and the turnover of change money may be a little faster as the amount of gross receipts grows. But the difference will not be great for a small increase in receipts, so that the amount of change money required can be estimated as proportional to expected receipts.

The determination of the bank balance is complicated by the frequent requirement that a certain amount or percentage of loans shall be kept on deposit. Where the requirement refers to average deposits, it will be up to the cashier to see that he does not exceed the deposit requirements at one of the banks with which his concern is doing business, until the deposit requirements of all the other banks have been met. The comptroller will also have to make sure that the lines of credit which he establishes will make it possible not only to carry the business past its financial peak load but also to meet the deposit requirements of his banks. The nature of these calculations cannot be gone into here. It may necessitate an increase in the peak load credit reserve. The amount of average deposits required will be an important factor in determining how far the maxima should be above the minima. In case the deposit requirements fix a minimum amount or percentage of loans instead of an average, the situation is simpler. For an absolute amount the receiving cash minimum would be a fixed sum covering this amount, the balance needed as an allowance for daily fluctuations (even in a receiving period there would

probably be some days that showed an excess of disbursements), and the change money and money for deposit. In the case of a percentage requirement the cash minimum would be a variable figure—the percentage required plus the constant sum needed to handle daily fluctuations, making change, and money waiting for deposit.

There are bound to be a number of complicating peculiarities in the determination of maxima and minima for any particular concern, for which a general rule is obviously out of the question. Only a few of these are suggested here. The important fact is that the fixing of these limits establishes the financial policy of the concern. The incoming cash minimum is fixed at the lowest balance that will safely carry the business until the cash on hand is replenished by further net receipts. The incoming maximum is then fixed above it by an amount equal to that of the loans that are to be paid off at one time. Thus loans are carried no longer than they are needed. Where a firm carries accounts with several banks, the cashier will probably be instructed to pay off all the loans at one bank first, clearing up its account there temporarily, while financing itself by the loans from the other banks. The comptroller will probably specify the time at which each account must be cleared up during the cash-receiving period. This is, of course, a matter of policy depending on his relations to his banks. But the determination of the incoming maximum and minimum reduces its execution to a routine. By fixing these the comptroller decides when loans are to be paid off and how much is to be paid. The detailed execution of the policy can be properly delegated to the cashier.

The reverse case of the outgoing maximum and minimum is precisely analogous to the balance of stores system. The comptroller determines when loans are necessary by fixing the outgoing cash minimum, and how large each loan shall be by fixing the maximum. The cashier pays out cash on requisition, until the balance on hand falls below the minimum; then he draws on the company's credit at one of its banks to bring the balance up to the maximum. The difference between the two limits must be sufficient to carry the business for such a time as the comptroller sees fit.

As in the case of paying off loans, the comptroller will probably prescribe the order in which the various banks are to be drawn upon, according to the circumstances. Thus successive loans may not be obtained from the same bank; it may be the concern's policy to rotate. Nor does such an arrangement necessarily involve a shortening of the period of the loan; the same result can be accomplished by allowing the various loans to overlap for different intervals. As in the case of the cash-receiving limits, too, the maximum and minimum must be fixed in view of the deposit requirements. No general rule can be laid down for fixing any of these safety points. Business conditions, the nature of the business, the type of organization, and the plans for the season must all be taken into consideration. The establishing of these limits is a matter of executive discretion. When they have been settled upon, the carrying out of the policy is reduced to a standardized routine.

In order to see how these prescribed limits would be applied it may be well to consider briefly some possible details of the cashier's daily routine. Presumably he would be limited in the paying out of cash to: (1) the payment of purchase invoices, and (2) the payment of cash requisitions signed by officers whose authority was recognized by the comptroller. The case of purchase invoices is peculiar, because the allotments to purchasing departments will probably be made in terms of the total purchases approved for a specified period rather than in terms of the cash payments, which will follow the purchases by approximately the length of the trade-discount period. Each invoice of goods received in satisfactory condition will come to the cashier as soon after arrival as possible to be checked against the departmental allotment. It will, of course, be periodic totals that will be checked against the budget directly; the individual invoice will only be charged to the department's account. In order to break these totals up into short periods of, say, a week or ten days, the comptroller may set a series of allotment percentages. Thus anything up to 40 per cent of a monthly allotment might be regarded as satisfactory during the first ten days; and anything under 70 per cent for the first twenty. If a given invoice did not bring the department's monthly purchase account above the percentage appropriate for the time

## Form II

## RELIABLE RETAIL COMPANY

## DAILY CASH TICKLER SHEET

Date.....

INVOICES			REQUISITIONS			ESTIMATE	
No.	Amount	Ck. No.	No.	Amount	Ck. No.		
						Mis. Cash Disb.	
						Invoices	
						Requisitions	
						Total	
						Less Misc. Cash Receipts	
						Net { Receipts* Disbursements*	
						ACTUAL	
						A&C Dept. Cash Sales	
						L&N Dept. Cash Sales	
						B&E Dept. Cash Sales	
						A&C Collections	
						Returns	
						Total Receipts	
						Invoices Paid	
						Requisitions Paid	
LOANS FALLING DUE							
No.	Bank	Amount	Ck. No.				
						Total Disbursements	
						Net {Receipts* Disbursements*	

\* Cross out term that does not apply.

of month, the cashier would enter it in a form such as that suggested in Form II for the date on which it was payable (with discount), and file it under that date. But if any invoice should cause the purchase account to exceed the due percentage of the allotment, the invoice would have to go to the comptroller. In this way the comptroller would only give his attention to purchase invoices in those exceptional cases that in his own estimation merited his personal consideration. In these cases he would probably take the matter up with the head of the purchasing department to see whether the circumstances warranted his approval. The fixing of percentages, like the fixing of the allotments themselves, is by no means the establishing of an inflexible rule. It is only inflexible to the subordinate for whose guidance the policy is formulated; the policy is always subject to modification by the executive, if it seems wise to him. For present purposes long-time obligations falling due will be treated as purchase invoices and entered in the left-hand column. Commercial loans that are due, on the other hand, should be entered in a special section and not included in the total net receipts or disbursements.

A large proportion of the cash disbursements on requisition will probably be regular enough in amount and time to be requisitioned several days in advance. The pay-roll is a case in point. The comptroller may require requisitions for disbursements of this character, to be made out, say, ten days before payment. The requisition form can be made to show the amount allotted for the month, and the amount drawn upon to date. Here, too, it would probably be advantageous to break the monthly allotment up into shorter periods by a percentage plan such as that just outlined for purchase vouchers. In this case the disbursement requisition would probably show also the amount allowed for the first ten or twenty days as a percentage of the monthly allotment. If the requisition carried the department's account above this sum, it would then have to go up to the comptroller for approval. Otherwise the cashier would enter it in the requisition column of the daily cash tickler sheet as approved, and file it under the date on which it was payable. It would, of course, be entered and

filed in just the same way, even though it should exceed the prescribed amount, provided the comptroller saw fit to approve it.

Besides the regular items of this character there are certain to be a number of miscellaneous items, of which taken individually the time and amount cannot be anticipated at all accurately. But it is desirable to get some notion of the total daily receipts and disbursements a little ahead of time. While it is difficult to treat these miscellaneous items one at a time, their total for such a period as a month can be estimated fairly closely. If, then, the monthly total, as shown in the budget (which might very well be made to show this amount separately, though for the sake of simplicity it was not done in Form I), is divided by the number of business days in the month, a rough estimate of the miscellaneous total is obtained. This amount would be entered in the tickler sheet as a single item. The comptroller, too, can retain control over miscellaneous disbursements as a group by fixing the percentages of the monthly allotment which the cashier might be empowered to approve in the first ten days and the first twenty. Or he may prefer to break this group of disbursements up along departmental lines. In case there should be a considerable divergence of actual from estimate in this class of items in the early part of the month, the comptroller may alter the daily miscellaneous cash disbursements estimate for the remainder of the month. Under the percentage plan he would be notified of an excess, and he might also require the cashier to report the matter to him in case the disbursements fell more than a certain percentage below the estimate.

Cash receipts are not so directly under a firm's control as cash disbursements, and therefore are more difficult to anticipate. Nevertheless, in some cases it is possible to handle sales invoices in very much the same way as purchase invoices. Where trade practice assures that under ordinary conditions a fairly constant percentage of customers will take their discounts, that percentage could be entered under the appropriate day in the cash program. Again, a wholesale house might classify some of its large customers as "sure pay" and enter their invoices in the tickler sheet accordingly. In any case the cashier will have to keep in close and

constant touch with the collections, if indeed he does not handle this end of the business in person. He will have to check receipts against collections quotas, and immediately report any shortage to the comptroller. For this purpose the quotas for the month may be broken up in the same way as allotments by fixing percentages. In this case it will be a failure to reach 25 per cent in the first ten days, for example, that would have to be reported, instead of an excess of 40 per cent of the allotment.

For the most part it is probable that no more detailed analysis of receipts would be possible than one along departmental lines. This is obviously true of cash sales. In general, then, the receipts entries in the daily cash tickler sheet will simply be the average daily quotas for each department for the current month, though in retail businesses some allowance for special sales will have to be made by the comptroller in consultation with the department head involved. In the case of a security issue, too, special arrangements would be necessary. And with receipts as with miscellaneous disbursements, any marked divergence of actual from estimate during the early part of the month might make it advisable for the comptroller to revise the estimate of average daily quota for the balance of the month for the department in question.

The system creates one type of cash receipt which deserves special mention—returns of the unused balances of requisitions. At first it might be difficult to estimate the amount of this item, though it would be a comparatively small one. As the system gets under way it would tend to become smaller and less subject to fluctuation.

The daily cash tickler sheet serves two functions. At the time of actual payment or receipt, the amounts received and disbursed are entered. In the case of receipts only the totals are entered. The payment of individual purchase invoices and regular requisitions when they fall due is indicated by filling in the check number by which the voucher is paid. In advance of payment and receipt the tickler sheet serves as a basis for estimating the cash requirements and change in credit reserve during the next few days, and so for determining whether the period is a cash-receiving period or a cash-disbursing period. The results of

the transactions for the next week or ten days can be summarized by entering the net expected receipts or disbursements from the several daily tickler sheets in a form such as that suggested in

### Form III

#### RELIABLE RETAIL COMPANY

#### TEN-DAY CASH BUDGET

*July 12 to 21, 1920*

Date	Net Rec.	Date	Net Disb.
<i>July 12</i>	\$ 350	<i>July 13</i>	500
		<i>July 14</i>	650
		<i>July 15</i>	475
		<i>July 16</i>	575
		<i>July 17</i>	1,000
		<i>July 19</i>	850
<i>July 20</i>	800	<i>July 21</i>	350
Total	1,150	Total	4,400
Initial Cash Balance	5,350	* {Incoming Cash Minimum } {Outgoing Cash Maximum }	10,000
Total	6,500	Total	14,400
		Loans Falling Due	
Loans Required	7,900	Loans to be Paid	
Total	14,400	Total	14,400
Net Increase of Loans			7,900
Credit Reserve on <i>July 12</i>			18,000
Estimated Credit Reserve on <i>July 21</i>			10,100
Peak Load Credit Reserve			5,000

\* Cross out term that does not apply.

Form III. The period is then characterized as an incoming or outgoing cash period, according as the receipts or disbursements total is the larger. The initial cash balance is then added to the receipts total, and the incoming cash minimum or outgoing cash



maximum, as the case may be, is added to the disbursements total. The loans falling due are then added to the right-hand total, and the loans to be paid to the right-, or loans required to the left-hand total, according to the circumstances. The account should then be in balance. The net increase of loans, if any, should then be subtracted from the balance of undrawn credit at the beginning of the period to show what that balance may be expected to be at the end of the period in comparison with the peak load credit reserve. In case it should ever prove smaller than the credit reserve, the cashier should notify the comptroller immediately. Ordinarily this "ten-day budget" would probably be made out only three or four times a month. Near the financial peak and foot loads it would probably be made out daily.

As a basis for and record of the actual drawing of credit and payment of loans the cashier may make use of a form like that shown in Form IV for a cash-receiving period, and a similar one—probably of a different color—during an outgoing cash period. The total of the left-hand column gives the amount of cash on hand in comparison with the receiving cash maximum. In case it exceeds this limit it is carried to the top of the right-hand column and the receiving cash minimum subtracted from it to show the amount of loans to be paid off. Below this are listed the loans outstanding at the different banks. When the loans are paid, this sum is subtracted from the loan total to show the loans outstanding after payment. This is compared with the total credit allowance to find the balance of credit in reserve. The form for the cash-disbursing period is very similar. The cash balance is compared with the outgoing minimum. If it is smaller, it is subtracted from the maximum to find the loans required. This amount is added to the loans outstanding for comparison with the total credit allowance, the balance again giving the total credit in reserve. In this way the comptroller determines when loans are to be paid off and when to borrow, while the detail of the administration is delegated to the cashier.

It is not intended to claim any particular merit for the specific details of financial administration presented here by way of example. These will necessarily vary widely with the line of business and

type of organization. But it is asserted that it is better to plan and arrange in advance for loans than it is to wait until they are needed and trust to luck and banking connections that they will be forthcoming. The budget system has the advantage over "mental arithmetic" as a method of making business plans, because it co-ordinates the activities of the financial administration

**Form IV****RELIABLE RETAIL COMPANY****DAILY CASH AND CREDIT STATEMENT FOR INCOMING CASH PERIOD***August 4, 1920*

Bank Balance		Balance Available	10,700
First National	\$5,000	Minimum Cash Balance	5,000
Merchants	3,000	Loans to be Paid	5,700
Traders National	1,800	Loans Outstanding	
For Deposit		First National	40,000
Checks	200	Merchants	10,000
Currency	500	Traders National	.....
Gold			
Silver	200		
Change Money		Total	50,000
Petty Cash		Less Loans to be Paid	5,700
Total	10,700	Balance	42,300
Less Loans Due		Total Credit Allowance	70,000
Balance Available	10,700	Balance of Credit in Reserve	\$27,700
Maximum Cash Balance	\$10,000		

with those of other departments of the business, systematically organizing the departmental plans into a single consistent policy for the whole concern. At the same time it preserves the business experience of the firm to the firm and not merely to the individual executive. The financial budget, moreover, puts the business on a firmer financial foundation, and so opens the way to more favorable terms at the bank. In the financial budget the banker

can "see his money coming back" in a much more accurate sense than when he merely thinks in terms of current assets and current liabilities. After the budget is made up on the basis of records specifically adapted to this purpose, the carrying out of the policy for financial administration is reduced to a standardized routine that can be delegated without loss of executive control. By fixing certain critical points the executive in discretion is enabled to put in his hand only at such times as in his own opinion require his personal attention. And he sees to it that the plans which have been made are being properly carried out by a system of periodic reports. The superior exercises control over his subordinate, not by giving him permission for each move piecemeal—once the plan has been established the subordinate need only go to his superior in case of an exception. And his responsibility is the responsibility of living up to the plan (budget). The budget and the report are the basis of executive control.

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